THE FACTORS IMPACTING MEN'S COLLEGE BASKETBALL RECRUITING CLASS RANKINGS: A REGRESSION ANALYSIS

Jacob Andrew Krul

A thesis submitted to the faculty at the University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Master of Arts in the Department of Exercise and Sport Science (Sport Administration) in the College of Arts and Sciences.

Chapel Hill
2019

Approved By:

Nels Popp

Jonathan Jensen

Brad Bates

ABSTRACT

Jacob Krul: The Factors Impacting Men's College Basketball Recruiting Class Rankings: A Regression Analysis
(Under the direction of Nels Popp)

The primary purpose of this study was to determine which program factors led to the most variance for the 2018 men's basketball recruiting class. Data was collected from 111 different programs, all from conferences that have had multiple bids within the NCAA Tournament at least once between 2014-2018. A regression was run to see which variables were significant for the class of 2018. From the results, conference affiliation, program all-time win percentage, UNWR ranking, and offensive efficiency were significant and led to upward movement in the recruiting rankings for the class of 2018.

TABLE OF CONTENTS

LIST OF TABLES

Chapter I

Introduction

College athletics is big business. Today, 31 institutions earn over $100 million in revenue (Berkowitz & Schnaars, 2017). Both Texas and Texas A&M earn over $200 million in revenue. With this much money available, it has caused schools to invest heavily to try and secure the country's top recruits. Many universities have spent tens-of-millions of dollars on new facilities to lure a top recruit. In 2017, Clemson completed a $55 million football complex that included a slide and a miniature golf course (Redd, 2018). Even programs with less success are breaking ground on new facilities. The University of Kansas football team, which has won 11 games since 2012, started construction on a new $26 million football practice facility. The race to build a new facility has been coined "the arms race." As Big 12 Commissioner Bob Bowlsby stated, "the only thing worse than being in the arms race is not being in the arms race, because you fall behind, and you don't have the tools that you need to get the job done" (Redd, 2018, p. 8).

Multiple theories and approaches exist to try and predict what it takes for a student-athlete recruit to commit to a university. Dumond (2008) suggests a recruit will pick the school that maximizes their expected utility. Maximizing utility comes down to multiple factors including; available playing time, program facilities, and the quality of the university's academics. Magnusen (2014) suggests that the individuals around a recruit combined with a coach's political skill, have a strong influence on where a student-athlete will commit. For many athletes, the amount of money offered in their scholarship package will be the largest factor in

their decision (Cooper, 1996; Doye & Gaerth, 1990; Kankey, 2007; Popp et al., 2011; Sanger, 2016; Widdison, 1982).

The recruitment of men's basketball and football prospects has become more public and more transparent with the creation of websites such as 247Sports, Scout, and Rivals. These sites aim to provide fans with information about a recruit's commitment decision. For example, on 247Sports, one can find a high school prospect's highlights, personal information (height, weight, hometown, etc.), the schools they have visited, and the name of the lead recruiter from each school (2018 Basketball, 2018). An interesting aspect of 247Sports is their "crystal ball" feature. The crystal ball feature is meant to provide fans with insight into where a specific prospect will commit based off website contributor predictions. These contributors are usually local or national beat writers who follow recruiting heavily and have connections throughout the industry.

Sites like 247Sports allow fans to find the recruiting information they desire. Today, it is not just college athletics fanatics searching for this insight, even causal sports fans have started to have an interest. For instance, 247Sports, which was purchased by CBS in 2015, has reached as many as 19.5 million unique visitors in one month (Fisher, 2015). College sports recruiting is now an industry of its own.

The recruitment of student-athletes has been around since the inception of college sport. However, never has the process been followed more closely and never has greater insight been shared. Social media and sites like 247Sports have brought about this change in the industry. Social media has allowed researchers to gain insight into where a recruit may or may not commit. Recently, Bigsby et al. (2017) combined "data about individual athlete's recruiting

activities with social media data to predict which school the athlete would choose." The researchers were able to take information from a high school prospect's Twitter profile, such as likes, retweets, follows, followers, and the use of certain hashtags, to predict where a recruit would commit. The inclusion of social media factors helped them improve previous predictive modeling within recruiting.

Along with the increased interest and coverage of recruiting, college athletic departments have started to increase their recruiting budgets. In 2001, the average institution spent roughly $526,000 on college football recruiting (Dumond et al., 2008). By 2010-2011, the University of Tennessee and many other big-name universities were spending well over $2 million on the recruitment of both male and female student-athletes for all sports (Magnusen et al., 2014). Since 1997, over 50% of NCAA DI institutions have doubled or tripled the amount of resources they have allotted for the recruitment of student-athletes.

The interest in the recruitment of student-athletes is engrained in the culture of college athletics now more than ever. Bergman and Logan (2016) found the "increasing popularity of college football and the financial rewards for conference championships and major bowl appearances has reinforced the emphasis on recruiting the best talent." The same rationale can be applied to college basketball, however, instead of focusing on reaching a bowl games, teams focus on making the NCAA Tournament.

In the world of college athletics, there is constant competition for media dollars and attention. The college football industry shows that being competitive helps pay the bills. From the 2017-2018 college football bowl season, the ACC received $87.5 million, the Big 12 $60 million, the Big 10 $89.5 million, the Pac 12 $62 million, and the SEC $70 million (Dosh, 2017). Reaching the postseason is also a great way to generate revenue for a college basketball team.

Based off 2017 numbers, every NCAA Tournament game a team participates in will earn a conference $1.7 million (Kesselring, 2017). The ACC generated over $30.8 million from the 2017 tournament alone.

College athletic departments are on a tight budget, nearly every Division I athletic department is losing money each year. A 2013 NCAA study found that all but 20 Football Subdivision schools generated a revenue (Burnsed, 2014). In the effort to be competitive, generate revenue, and bring about media attention, many schools have increased their investments into their athletic department. From 2004-2013, FBS school expenses have climbed 114.6%. A great deal of these expenses come from facility investments and coaching contracts. In 2014, 48 schools within the Power 5 spent $772 million combined on athletic facilities, an increase from the $408 million spent in 2004 (Hobsin & Rich, 2015). Coaching salaries have also increased drastically in recent history. From 2010-2015, the average assistant football coach salary has increased by 52%, to over $236,000 (Koos, 2015). During the 2014 season, the average FBS head football coach earned $1.75 million, while the nation's top 25 best-compensated coaches made over $3.85 million.

Many of these athletic departments are spending exorbitant amounts to stay competitive. For instance, for eight Texas public universities that play at the FBS level, recruiting costs have increased 131% on average since the 2007-2008 academic year (Najmabadi & Levitt, 2018). Lisa Campos, athletic director at the University of Texas-San Antonio stated that "if you want excellence, you have to invest in it." The University of Texas-El Paso spent over $100,000 on scouting services, specialized software, and access to databases in order to improve their recruiting efforts. Eric Algoe, vice president at Texas State University explained that these recruiting investments can potentially lead to your school being featured on ESPN, which in turn,

can attract students and gifts to the university. As seen above, both universities large and small are spending more and more to attract recruits. The hope is that these recruits will lead to success on the field and to greater benefits for the entire university, but this has yet to be proven.

Statement of Purpose

Interested readers can find a great deal of research related to the recruitment of high school student-athletes. Many of these studies focus on why a prospect chose a university and what factors led them to make that decision. Dumond's 2008 study ran a regression to understand what factors led a recruit to select a school and then predict where a recruit would commit based off their findings. Kankey (2007) surveyed student-athletes and asked them directly what led to their decision. Magnusen (2014) examined the idea that agents of influence exist around the recruit and that they have a large impact on the recruit's decision. The research shows that one can take multiple approaches to study this idea. The findings of many of these studies are presented in the literature review.

Most of the studies included in the review of literature obtained their data by surveying student-athletes. Many of these surveys asked student-athletes to state what they valued in their own words or to rank potential recruiting factors. Within the literature review, a few consistent factors emerged. Some these factors include; (a) the personality of the head coach/relationship with the head coach, (b) recent success (win percentage), and (c) academic ranking. (Dumond et al., 2008; Johnson, et al., 2009; Popp et al., 2011).

Survey methodology has key limitations. For instance, these student-athletes are completing this survey after they have arrived on campus. This could be a few months to a few years after they have made their college decision, and this could warp their outlook. Surveys

leave room for response bias and social desirability bias. Response bias is a "generic term for a whole range of responses to interviews, surveys or questionnaires which bias the response (from the correct, honest, accurate response)" (Furnham, 1986, p.385). Social desirability bias is one form of response bias. Social desirability bias means the individual completing the survey lies in their responses to create a good outcome or the outcome the researcher is hoping to obtain. Again, surveys can lead to bias and student-athletes may feel coerced to tell administrators what they want to hear.

To eliminate response bias, the current study utilizes secondary data to understand which factors have the greatest influence on variability in recruiting class ranking. Overall, the idea behind this study is to help inform administrators about how to spend their scarce resources to create the largest impact on recruiting. College athletic budgets are on the rise and very few universities generate a profit. Athletic directors cannot waste resources. The study will answer the question; what factors influence variability in men's basketball recruiting class ranking?

Dumond, Lynch, and Platania (2008) provide an example of a regression analysis like the one that will be used in this research. The researchers predicted where a recruit would attend based on information obtained from past recruiting classes. However, this test was completed in 2008 and it looked at college football recruits. So much has changed since 2008. For instance, 247Sports, which would later go on to acquire Scout.com, a leading recruiting service, did not exist until 2010 (Barnett, 2017). The purchase allowed 247Sports to acquire Scout's talent, which lead to an increase in expertise and accuracy in recruiting analysis. CBS acquired 247Sports in January of 2016 and the site saw a 43% increase in traffic from 2016 to 2017. It would be wise to continue to update recruiting research as the industry continues to evolve so administrators can make informed decisions when they are spending their resources.

Research Questions

Based off the literature review, the following research questions have been developed:

RQ1. What does the current landscape within mid-major and high-major basketball programs look like relative to variables identified in the literature as important to recruiting?

RQ2. What key variables predict a statistically significant amount of the variance in recruiting ranking scores?

Definitions

Recruiting Class: A recruiting class is made up of every college basketball recruit that commits to a given university for a specified year. For instance, the recruiting class of 2018 will enroll in August of 2018.

High-Ranking Recruiting Class: A high-ranking recruiting class is a recruiting class that contains multiple high-level recruits (high star ranking) or a high average rating for the group of recruits (raw score). 247Sports, the site that is featured in this study, ranks each recruit from one on down to the lowest rated player. The higher the recruit is rated, the greater the rating they will receive and the greater the number of stars they will receive. For instance, the number one overall rated recruit is a 5-star recruit (max score) and has a raw score rating of .9999/1.0.

Power 5 Conferences: The "Power 5" is made up of the five most profitable conferences in college athletics; this includes the Atlantic Coast Conference, the Big 10 Conference, the Big 12 Conference, the Southeastern Conference, and the Pac-12 Conference. These conferences have the authority to create some of their own rules, legislation and voting rights for athletes

(Solomon, 2014). If a team is within a conference outside of the Power 5, they have less resources and less voting rights and most likely fall within the Group of 5.

Limitations

One of the larger limitations of this study is that it does not directly ask a recruit why they are selecting a university. Instead, it focuses on secondary data to find the connection between recruiting class ranking and a multitude of factors. The current study's method takes away a recruit's voice, which could prevent it from obtaining certain information.

Another limitation pertains to the evaluation of college basketball players. Player evaluations are conducted by recruiting experts and other sports writers. An evaluation of a high school prospect can be subjective. The nature of the basketball industry does not provide many concrete measures related to the skill or potential of a recruit (possibly, points scored per-game and other per-game statistics). Another limitation is that data collection for this study began in the summer of 2018. Data collection was beholden to the most current update to recruiting rankings, which depending on the site, may be out of date. In the end, this could have affected some of the recruiting class rankings.

Another limitation is based around the fact that the current study looks at a little over 100 programs. While, the analysis of college basketball recruits has made great strides over the past 5-10 years, issues still exist. For instance, low-level recruits, say a 2 or 3-star, will not receive a great deal of interest or coverage. This means that their ranking may not truly reflect their capabilities. Every year, under-recruited players that go to smaller, less successful programs surpass their projections. A Rivals recruiting article shows this to be the case. From 2003-2015, 780 players were drafted into the NBA (Bossi, 2016). With the elimination of international

players and players that were in high school before the recruiting service existed, the study is left with 467 players. Of those 467 players, 139 were rated a 3-star prospect or lower (roughly 30%). The next limitation is based around the idea that you cannot quantify a relationship with another person. As mentioned in the literature review, recruits place a great deal of weight on their relationship with the coaching staff. How does one quantify a relationship?

Another limitation is that this data set only contains one year of data. The class of 2018 could be unique, and these results could change for another class. Additionally, not every university is nationally ranked. If the institution is a regional university or a liberal arts college, they will have their own rankings, which could lead to some inconsistency. Lastly, when the data collection process began, the 2019 school rankings were already on the USNWR site versus the 2018 rankings. Those rankings were used even though the basketball prospect would have used 2017/2018 data to help make their school selection.

Delimitations

The current study has chosen programs within conferences that have received multiple bids to the NCAA Tournament. The choice to select only programs within multiple bid conferences was made for a few reasons. Mainly, programs within conferences that receive one bid often recruit at a lower level. Meaning that, there is less info on their recruits/commits and it is less likely those recruits are featured on 247 and other sites. This means that hundreds of programs will not be included in the study. Further, Florida Gulf Coast in 2013 was the last time a program that is not a member of one of the conferences featured in the study made it to the Sweet 16 or further. Displaying that there is a very small chance one of the programs not featured in the study has had a great deal of success in the NCAA Tournament, so they are not

included. Lastly, the independent variables selected are based off the literature review findings and author preference.

Significance of Study

This study is significant because it aims to answer the question, which factors influence variance in men's basketball recruiting class rankings? It will take previous research and build upon it. For instance, the variables used in the current study come from the findings of previous studies. The current study will also provide an update to see which factors contributed to variance in the 2018 men's basketball recruiting class rankings. Many studies examined which factors a recruit ranked higher or weighed more heavily with a survey (Kankey, 2007; Popp et al., 2011; Sanger, 2016; Treadway et al., 2014; Widison, 1982). Instead, the current study will use a regression analysis to try and understand which recruiting factors correlate to a high-ranking recruiting class. Examples of this type of study have been referenced. For instance, Dumond's 2008 study. Overall, the study will provide an update to this area and it will fill the gaps that are present in the literature. The goal of the study is to help administrators decide where to spend their scarce resources to have the biggest recruiting impact.

Chapter II:

LITERATURE REVIEW

Recruiting Landscape/Commitment Decision

Sevier (2000) suggests that three stages exist in the college selection process for students. During the first stage, students begin to examine options and may become overwhelmed with the amount of information available to them. Next, a student seeks detailed information about each institution. The information they see and the questions they ask are customized to fit their needs and expectations as they begin to narrow down their choices. Within the third stage, students apply to a handful of schools that are similar based on three variables. These variables include; (a) how well students feel they fit on campus; (b) financial aid available; and (c) the cool quotient (is the university considered cool by their friends). Student-athletes, like regular students, weigh many factors in their college decision. As noted in Sanger's (2016) survey, student-athletes weigh factors such as head coach relationship, degree opportunities, size of the school, academic support, athletic facilities, and location all played a role in their decision.

Head Coach Relationship

The majority of the published research concluded that the head coach was one of, if not the biggest, influence for a recruit to pick a school (Davis, 2006; Dumond et al., 2008; Gabert et al., 1999; Johnson et al., 2009; Pitts & Evans, 2016; Popp et al., 2011; Sanger, 2016; Widdison,

1982). Dumond et al. (2008) conducted a probit analysis to predict where a college football recruit would ultimately commit based off secondary information. Dumond found that a new head coach reduces the probability that a recruit selects a school by 2.5%. Johnson et al. (2009) surveyed both male and female student-athletes within both revenue generating and non-revenue generating sports. Overall, head coach relationship was found to be the second-most important factor in the recruiting decision. In 2006, a survey that was given to Virginia Tech student-athletes found that male student-athletes rated their coaches as the most influential factor in their decision (Davis, 2006). Kankey's 2007 study on Division I softball players also found that the recruit's relationship with the head coach was one of the biggest reasons to commit to a given program. This was also the case for Sanger's 2016 study (head coach was highest-rated factor).

The importance of having the right head coach in place cuts across time, sport, and student-athlete demographics. Widdison (1982) found that the program's head coach was the third most influential reason for a recruit to pick a school (volleyball). Even international student-athletes rated the personality of the head coach as the second-most influential factor in making a commitment decision (Popp et al., 2011).

After concluding that a recruit's relationship with a program's head coach is crucial, it seemed imperative to understand how coaches can form such an impactful relationship. Magnusen and his co-authors (2014) aimed to understand why certain recruiters were effective. In the end, Magnusen found that sometimes, it just comes down to the fact a certain coaching staffs fit the caretaker role better than others. Further, whether the recruit and their family have a positive perception of the recruiter leads to a recruit selecting a given school.

Cooper (1996) found a coach's commitment to the program was the largest factor in a recruit's decision. Commitment can come in many forms including; how many hours the coach

puts in each day and how long they stay around. The survey results demonstrated the importance of the coaching staff. Of the five most important considerations, four were based on the coaching staff and their style of play.

While it is difficult to measure the relationship between a recruit and a coach, one way to determine whether a relationship is poor is to see if one of the parties ends the relationship prematurely by transferring to another school. In 2018, the NCAA explored the men's basketball transfer market. The rate of transfer between 4-year colleges in Division I men's basketball was relatively high compared most other sports (Tracking transfer, 2018). In the end, around 40% of all men's basketball players who enter Division I directly out of high school will leave their initial school by their sophomore year. Where a player would ultimately transfer varied. Only 46% of the transfers would land at another Division I program, while 28% would leave for a Division II program, 1% to a Division III program, and 25% to a NAIA or NJCAA program. Why do these players leave? The NCAA found that 90% of players left for athletic reasons, which can relate to playing time, team style of play, or the coaching staff.

Importance of Winning

Winning is important to a program and an institution. If a program is successful, it may lead to positive outcomes for the greater university, such as exposure. With this is mind, many universities have invested a great deal in their athletic programs to try and make them successful. For instance, many high-level Power 5 programs are spending upwards of $1 million on recruiting (Magnusen et al., 2014). This number has risen drastically over the past two decades.

Again, since 1997, over 50% of NCAA Division I institutions have doubled or tripled the amount of resources they have allotted to the recruitment of student-athletes.

Another factor influencing recruits is team success. One study found schools with on-field success were able to attract quality recruits with greater numbers versus teams that have performed poorly over the course of multiple years (Langelett, 2003). Pitts and Evans (2016) ran an ordinary least squares regression to study this topic. From 2002-2014, the authors found that both having a winning season or finishing the season ranked in the top 25 had a positive impact on a team's recruiting ranking. Similarly, universities with successful head coaches, in terms of win percentage, led to a higher-ranking recruiting class. To go further, the authors found the average recruiting class for the last ten college football national champions five years preceding their championship season was seventh. Nine of the previous ten national champions earned a top five recruiting class for the recruiting class preceding their national championship season, according to Rivals.com. Overall, from their regression analysis, Pitts and Evans found a statistically significant correlation between a team's win percentage and the ranking of its most recent recruiting class over the previous five seasons. From their regression, a 1% increase in a team's win percentage leads to an improvement of about .06 spots in their recruiting rankings, meaning that, an additional two or three wins in the previous season would result in a team's recruiting ranking improving about one spot.

Bergman and Logan (2016) examined how high-level recruiting contributes to winning. Based on their findings, the authors of this study estimated a 5-star recruit was worth more than $150,000 in expected BCS bowl proceeds to a school. From their analysis, Bergman and Logan concluded that each additional 5-star recruit increases the number of wins by .437 each year for a college football team. Recruiting class impacted conference wins, conference standings, and a team's probability of reaching a BCS bowl. Furthermore, the higher the star rating a recruit receives, the greater the impact that player will have on a team's win percentage. With those

results in mind, one can see that a 3-star recruit will have a smaller impact on the number of wins a team accrues over the course of a season as compared to a 4 or 5-star recruit. This all connects back to Langelett's (2003) study which found when a team recruits well, they see an increase in the number of wins in subsequent years.

One study found an interesting distinction between high-level prospects and mid-level prospects versus low-level prospects. High-level and mid-level prospects both valued historical on-field success and head coach success (Mirabile & Whitte, 2017). However, low-level prospects were more interested in recent on-field success versus sustained success over a long run. Nearly all the high-level prospects in this study committed to a BCS school, which are known for their historical success.

Dumond et al's. (2008) study challenged the idea that winning leads to a better recruiting class and vice versa. In the Dumond study, multiple factors contributed to a recruit selecting a school. However, Dumond found team's ranking in the final Associated Press poll could hurt them. From Dumond's regression, an "increase in the final AP poll from the prior season reduced the probability of a recruit selecting that school by more than 2%" (Dumond et al., 2008, p.76). For instance, if Team X finished 8th in the final poll in 2017 and then finished 7th in the final poll for 2018, a recruit is 2% less likely to pick that school.

To examine this issue from another angle, one could look over Morris' 2018 article that explored how college basketball recruiting class rankings can impact on-court performance. author of this study created a point system to help calculate class ranking. For instance, his system gives 20 points to the top-rated player, 19 points to the 2nd-highest rated player, and one point to the 20th rated player. Then, the points are added up for each team in each recruiting class. After running this test for every class since 2007, the author found that Kentucky's 2013

recruiting class was the highest rated during that time period, according to ESPN recruiting rankings. The 2013-2014 Kentucky team went on to the national championship that season and fell to the University of Connecticut. Overall, the author found little correlation between recruiting class ranking and championship seasons.

Maxcy (2013) took another approach to examine a coach and a team's success. The Maxcy study includes a model of managerial efficiency that evaluates coaching efficiency in terms of both use of talent and recruiting. Inherently, Maxcy wanted to find which coaches were getting the most out of their players. A multitude of factors were inputted into Maxcy's formula, including the talent available to the coach (players), the resources available to the coach from the athletic department (dollars available), the coach's age, the coach's race, etc. In the end, on-field performance was one of the largest factors related to whether a coach would get fired. Maxcy found that a successful season brings about an improved recruiting class. Coaches from high-resource (BCS) programs populated both the top and the bottom of the efficiency rankings. As Maxcy explained, coaches from BCS programs, who use their talent efficiently, also tend to finish high in the SRS ranking used in the study.

Brand, Exposure, and Conference Affiliation

Having a distinct brand that is known outside of the local area had a large impact on recruiting (Goss et al., 2006; Judson et al., 2006). Judson et al. (2006) stated that it would be wise for a coach to become a living embodiment of the university's brand. Brands are built off multiple factors including facilities, amenities, public relations, and academics (Goss et. al., 2006). Factors such as these are also connected heavily to winning. Traditionally, "blue bloods" have been defined as programs that have performed well in recruiting, sit atop of conference

standings, have a coach that is known to win, and they are constantly in the hunt for a national championship. The data supports this idea.

Treadway et al. (2014) sampled 175 FBS coaches and their recruiting outcomes to help investigate the qualities possessed by a successful recruiter. The authors found the head coach's all-time win percentage and membership in a BCS conference were both positively correlated with recruiting success. Further, universities with successful head football coaches (higher win percentage) lead to a higher ranked recruiting class. Moreover, media exposure, based on the number of games a football program was featured on national television (CBS, ABC, NBC, FOX, and ESPN), made it increasingly likely that a recruit would select a program. The data also shows that being in a conference where a member institution wins a championship, boosts the recruiting class rankings of all other members (football) (Pitts & Evans, 2016).

Based off Mirabile and Whitte's 2017 study, one could see that mid-level and high-level prospects have different wants. For instance, mid-level and high-level prospects are more interested in facilities, stadium capacity, coaching expenditures, and media exposure. Factors such as media exposure and facilities are connected to brand. High-level prospects come into college believing that they will play a sport professionally, so having a high level of media exposure is a significant factor.

Stadium size had a significant relationship for mid-level and high-level prospects. To illustrate, a hypothetical 10,000 seat expansion would make a mid-rated prospect 1.04 times more likely to commit to a school. Institutional spending was also significant for mid-level and high-level prospects. Each additional million dollars spent on athletics by a university made a high-level recruit 1.02 times more likely to sign with that school. The study found that high-level prospects almost exclusively played for BCS universities when it came to college football (93%

committed to a BCS school). As examined in a 2018 Sports Illustrated article (Staples, 2018), "in the last five high school football recruiting classes, 158 prospects have been given five stars in the 247Sports.com composite rankings. Only one has chosen a school outside the Power 5 – the ACC, Big 12, Beg Ten, Pac-12 and SEC – the conferences that make the most money, produce the most NFL first-rounders and win all the national titles." The one player who did not commit to a P5 school was Ed Oliver, who instead, decided to commit to his hometown Houston Cougars.

It is clear that winning, conference affiliation, and brand perception are all important factors in the world of recruiting. When exploring studies looking at Olympic sports, one could see these items were not weighed as heavily. Johnson et al. (2009) surveyed student-athletes from both revenue and non-revenue generating sports. Johnson found that television exposure was the second-lowest reason for a recruit selecting a university. While, TV exposure was rated higher for male student-athletes, overall it was a non-factor for student-athletes that were participating in non-revenue sports that receive little media coverage. Similarly, for softball players, media exposure, sponsorship, and the team's website (all related to brand) were some of the lowest-rated factors when it came to a recruit selecting a school (Kankey, 2007).

One aspect of a program's brand is who they align themselves with in terms of apparel providers. Davies and Burakowski (2015) conducted an exploratory study that aimed to examine the extent to which apparel sponsors affect student-athlete recruitment. The authors interviewed ten football players at an FCS institution in the Rocky Mountain region. The interviews suggested that football players at this institution did not hold the apparel and equipment sponsorship as a deciding factor for the commitment to a school. However, the study presented

only interviewed ten players at a school that would not have a large apparel deal, unlike a BCS program.

Few studies that examine the relationship between recruiting and apparel provider exist outside of Davies and Burakowski's (2015) research. A 2011 Fox Sports article interviewed top recruits and asked whether a team's apparel provider mattered. One top recruit said it was important, but it was not as important as quality of education, playing time, or location of the school (Can Apparel, 2011). A 2015 article from the Huffington Post asked high school football recruits which brands they preferred (Sato, 2015). Around 73% of recruits stated they preferred Nike the most. Under Armour came in second at 16%, Adidas third with 7%, and 4% or recruits said other. While there is limited evidence, apparel deals can be another factor in this complex decision for high school recruits.

Academics

The academic reputation and the majors the institution offer are recruiting factors for student-athletes who participated in both revenue and non-revenue generating sports as noted by researchers (Davis, 2006; Doyle & Gaeth, 1990; Dumond et al., 2008; Fisher, 2009; Frank, 2004; Frey, 1982; Johnson et al., 2009; Kankey, 2007; Mirabile & Witte, 2017; Pauline, 2010; Pitts & Evans, 2016; Popp et al., 2011). For Olympic sport student-athletes, academic related factors were important. For instance, degree programs offered was the third highest factor in Johnson et al.'s (2009) survey of Olympic sport athletes. Pauline's (2010) MANOVA study based around DI-DIII lacrosse players found that career opportunities after graduation, academic reputation of the university, overall reputation of the university, availability of academic program or major, and reputation of academic major and program were the most influential factors. This was especially the case for female lacrosse players who ranked academic factors much higher than

their male counterparts, who were more concerned with the makeup of the coaching staff (Davis, 2006). Furthermore, academics were rated much higher by DII and DIII lacrosse players versus DI players (Pauline, 2010).

Mirabile and Witte's 2017 research which looked at high-level, mid-level, and low-level prospects found that mid and low-level prospects placed more weight on their education. For both mid-level and low-level recruits, the average incoming SAT score and graduation rate at an institution both played a significant role in a student-athlete's commitment decision.

Like lacrosse players, softball players ranked major, academic program, and career opportunities after graduation as some of their top factors (Kankey, 2007). Academics were not rated as highly by international student-athletes compared to domestic student-athletes (Popp et al., 2011). Domestic student-athletes focused more on academics, where international student-athletes were more concerned with playing time, their scholarship, and the program's coaching staff. Pitts and Evans (2016) found that the academic quality of an institution was correlated to a better football recruiting class. In fact, a team's recruiting ranking increased nearly one spot for each 14% decline in acceptance rate. However, Dumond et al. (2008) did find that the graduation rate for student-athletes from a given school was a non-significant factor in the recruiting process.

Academics and athletics have an interesting relationship. To better understand this relationship, it is wise to examine Fisher's (2009) study that looked at the relationship between athletic success and academics. Fisher states that "admissions and fundraising numbers are important in determining institutional prestige, and spectator sports may well influence an increase in both the quantity and the quality of applications and the number and size of donations especially from alumni" (Fisher, 2009, p.46-47).

Pitts and Evans (2016) found a few academic factors that could negatively impact recruiting. For instance, schools facing bowl bans, scholarship restrictions, and probation will all have lower-ranked recruiting classes. APR and GSR scores connect to this finding. If a program has a poor APR or GSR score, this will lead to negative outcomes, such as a postseason ban.

Facilities/Capital Projects

Sanger (2008) examined men's hockey student-athletes and the factors they weighed when choosing a college program. From the survey results, Sanger found a program's athletic facilities were in the top five of a recruit's most important factors. A program's facilities were slightly more important to incoming freshmen versus sophomores that have been on the team. Sanger's findings show the importance of facilities for this group; however, according to Sanger, the importance may wane over time.

Schneider and Messenger (2012) also examined the recruitment of college hockey players. The hockey players that participated in the study were asked to rank several recruiting factors in terms of importance. Opportunity to play immediately, receiving athletic financial-aid, and the perceived opportunity to play immediately were the top three reasons to commit to a school. Schneider and Messenger found that training facilities (weight room/locker room) were the sixth most important factor to a recruit out of twenty-four factors, while the team's home arena was the twelfth most important. Although the data is limited in that it only examines recruiting factors around men's hockey players at one institution, Schneider and Messenger's study leads one to believe recruits/players care more about their training facility than their home arena.

Conclusion

In summary, some of the largest factors that were discovered include a recruit's relationship with the program's coaching staff and their style of play, win percentage, the program's brand/exposure, conference affiliation and academic factors related to the university. The variables used in the current study will be related to the findings from the literature review.

Along with the discovery of potential variables, potential gaps in the literature were also discovered, gaps that can be filled by the current study. First, many of the studies mentioned earlier made use of a survey to obtain data. This leaves room for response bias and social desirability bias. The current study will also provide a 2018 update to the material by running a regression analysis and answering a compelling question. Lastly, many of the studies used in the literature review examined football or an Olympic sport, the current study will examine college basketball recruiting.

Chapter III

METHODOLOGY

The current study will use a regression analysis to evaluate the data. A regression analysis is a way of sorting which variables have an impact on variance in the measurement of a dependent variable (Gallo, 2015). The analysis will display how the value of a dependent variable changes when one of the independent variables changes. Athletic administrators will then be able to better predict which factors will lead to a higher-ranking recruiting class and focus their effort and resources into those areas. This regression analysis will be conducted on SPSS software and will be similar to Dumond et al's 2008 study and Pitts and Evans' 2016 study. However, this regression will utilize new data to update this area of research.

A program's recruiting class ranking will be the dependent variable. A team's recruiting class ranking will be obtained from 247Sports.com, which has a composite rating feature. The composite feature takes each individual recruit's rating from each of the top sites (247Sports, Rivals, Scout, etc.) and then averages those scores together for a raw score. This gives a recruit an individual composite rating. Then every recruit committed to one school has their composite ranking averaged with every other player committed to that school, this gives a school a composite raw score for the class.

Procedures/Protocol:

For this study, the 2018 men's basketball recruiting class was examined. Each university selected in this study was chosen because they are a member of a conference that has received multiple NCAA Tournament bids at least once in the past four seasons (2014-2018). The conferences included in this study are as follows; ACC, SEC, Big12, Big East, Big10, AAC, A-10, Pac-12, MWC, WCC, and MVC. Overall, 111 individual institutions were examined.

Variables

A set of independent variables were included in the current study. The variables selected were chosen based off past research. Ten variables were originally selected to see which variables were the best fit. Regression analysis literature has indicated that one independent variable should be selected for every 10-15 observations in a study (Austin & Steyerberg, 2015; Harrell Jr., 2015). The original ten variables included; **(a)** Offensive Efficiency for the program in 2018 (Off. Efficiency), Wright, Smart, & McMahan (1995), **(b)** 2019 USNWR ranking (USNWR), (Davis, 2006; Doyle & Gaeth, 1990; Dumond et al., 2008; Fisher, 2009; Frank, 2004; Frey, 1982; Johnson et al., 2009; Kankey, 2007; Mirabile & Witte, 2017; Pauline, 2010; Pitts & Evans, 2016; Popp et al., 2011), **(c)** whether the program has a separate practice facility (Cap Projects), (Sanger, 2008; Schneider & Messenger, 2012), **(d)** the program's GSR score (Grad Rate), Pitt & Evans (2016), **(e)** the program's apparel provider for the 2018 season (Apparel), Davies and Burakowski (2015), **(f)** whether the program faced a coaching change between 2015-2018 (Coach Change), (Pitts & Evans, 2016), **(g)** the program's all-time win percentage (All Time Win), (Bergman & Logan, 2016; Dumond et al., 2008; Langelett, 2003; Mirabile & Whitte, 2017; Pitt & Evans, 2016), **(h)** whether the program was in a Power 5 conference or a Group of 5 conference (P5G5), (Mirabile and Whitte's, 2017; Treadway et al, 2014), **(i)** the program's win

percentage in 2016-2017 (Season Win) (Bergman & Logan, 2016; Dumond et al., 2008; Langelett, 2003; Mirabile & Whitte, 2017; Pitt & Evans, 2016), **(j)** and the average number of transfers that left the program between 2015-2018 (Avg. Transfer) (Boetger, 2017).

The variables below have all been studied and have been found to have a varying amount of impact on a recruit's college decision, but not in the context of a men's basketball recruit. Previous studies focused a great deal of attention on football and Olympic sports. This study is different in that regard. The regression analysis will aim to detect the relationship between variables and recruiting class ranking.

KenPom Offensive Efficiency (2018)	The Offensive Efficiency Ranking for 2018 (2017-2018 season) was found on KenPom.com. This variable relates back to coaching style. Based on the KenPom site, adjusted offensive efficiency is an estimate of the offensive efficiency (points scored per 100 possessions) a team would have against the average D-1 defense. Offensive efficiency relates back to style of play and the coach's philosophy.
USNWR Ranking (2019)	The variable will be examined through the use of the USNWR rankings. USNWR categorizes schools into one of four categories; (a) National Universities, (b) National Liberal Arts Colleges, (c) Regional Universities, and (d) Regional Colleges. School rankings are based off 16 different metrics chosen by the U.S. News staff. Metrics include; outcomes, faculty resources, expert opinion, financial resources, student excellence, and alumni giving (Morse, Brooks, & Mason, 2017).
Capital Projects	Programs were separated by whether they had a separate practice facility or used the same facility as venue for home contests.
GSR Score (2016-2017)	The graduation rate variable will examine the program's GSR score from the NCAA's most recent data. Each year, the NCAA examines how successful a university is at graduating

	its student-athletes (Division 1, 2018). GSR is the proportion of the first-year, full-time student-athletes who entered a school on athletics aid and graduated from that institution within six years (Graduation, n.d.)
Program Apparel Provider (2017-2018 season)	If a program was a Nike school, they received a score of 1. If that school did not have its apparel provided by Nike, they were given the score of 0. This information was found by looking through each individual team's media guide. Nike was the apparel provider for over 69% of the programs featured, so their recruiting impact will be examined.
Coaching Change	The study will examine whether there was a coaching change between 2015-2018. If there was a coaching change, it was noted, and the program received a score of 1. Removing a coach from their position disrupts the player-coach relationship.
Program All-Time Win Percentage	Individual team media guides were used to find a team's all-time wins and losses to obtain their all-time win percentage.
2016-2017 Program Win Percentage	Individual team media guides were also used to find a team's wins and losses for the 2016-2017 season.
Power 5 versus Group of 5	The Power 5 versus Group of 5 was found through an internet search. The meaning of the Power 5 tag is given in the definitions section. If the program is not in the Power 5, they are coded as a Group of 5 school.
The average number of transfers that left the program between 2015-2018	Each team was inspected from the 2015-2016 season to the 2016-2017 season through the 2017-2018 season. Any player that was not a senior and was off the roster was noted. From there, an internet search was conducted to find whether the player transferred from the team, graduated early, was a walk-on, or was kicked off the team. If the player transferred from the team either as an undergrad or as a graduate student, a point was added. If the player was a walk-on or was kicked off the team, the program was not given a point for the player leaving. If many players are transferring away from the program, this could be because the player-coach relationship is dwindling.

Chapter IV

RESULTS

Descriptive Statistics:

As discussed throughout the study, data has been collected from a multitude of sources. The dependent variable, composite recruiting class ranking, was obtained from 247Sports. From there, a profile was made for each program in the subject pool. If a program did not have a recruiting ranking, they were removed from the spreadsheet. A program would not receive a rating for a multitude of reasons. One reason could be that the school had zero commits for the 2018 class. Another reason could be that a school had a commit for that year, but that player did not have a profile in the 247Sports system. In the end, 20 schools were dropped from the spreadsheet, leaving the study with a total of 111 schools to examine. Below, one can find the descriptive statistics for all the variables observed in the present study.

Table 1

Descriptive Statistics for All Variables

	N	Min	Max	Mean
P5 recruiting rank	65	1	149	43.15
G5 recruiting rank	46	9	167	92.67
Recruiting rank of programs with practice facilities	79	1	155	59.14
Recruiting rank of programs without practice facilities	32	7	167	79.50
Recruiting rank of programs with a coaching change between 2015-2018	32	4	150	62.69
Recruiting rank of programs without a coaching change between 2015-2018	79	1	167	65.69
USNWR	111	7	205	92.95
GSR	111	932	1000	972.29
All-time win percentage	111	.41	.76	.58
Apparel provider recruiting rank: Nike	77	1	150	62.31
Apparel provider recruiting rank: Other	34	5	167	71.11
Offensive efficiency	111	1	334	95.75
2016-2017 season win percentage	111	.16	.95	.58
Average amount of transfers	111	0	3	1.11

Capital Projects:

Above, one can see that most of the programs featured in the present study had a practice facility for their program. The mean recruiting ranking of programs with facilities was lower than the mean ranking of programs without facilities. However, both groups had a large range in their recruiting rankings. The top recruiting program without a facility brought in the seventh best recruiting class for 2018, showing that it was still possible to recruit at a high level without a

facility. Lastly, one program with a basketball facility brought in the 155th best class in the country for 2018. This shows that having a facility does not automatically push one to the top of the recruiting rankings.

Graduation Rate:

Above, one can find the descriptive statistics pertaining to graduation rate. The maximum score is 1000 and the average score for the programs was 972.29, meaning that most programs are close to the max.

Apparel Provider:

Above, one can find a breakdown of the prevalence of each apparel provider in our sample. The data comes from the 2017-2018 season, which was the season before the class of 2018 committed.

Academics (USNWR):

A breakdown of each conference's academic ranking is listed above. The mean USNWR ranking was roughly 93rd.

Winning (All-Time Win Percentage and 2016-2017 Win Percentage):

As mentioned in the literature review, recruiting and winning go together. The more a team wins, the better they recruit. Above, the average all-time win percentage for the programs featured in the study can be found. The 2016-2017 season was also included because many of the recruits in the class of 2018 committed to a program a season before they enrolled, and they are basing their decision with the 2016-2017 program record in mind. The average men's basketball program has won more games than it has lost over the course of the program's history. The

2016-2017 season win percentage for all the featured programs was 58% and the average all-time win percentage for the featured programs was also 58%.

Coaching Relationship (Offensive Efficiency, Coaching Change, and Average Number of Transfers):

Above, a breakdown of the average number of transfers between the 2015-2016 season through the 2017-2018 season is presented. Further, the average KenPom Offensive Efficiency Ranking and the number of coaching changes (2015-2018) is also featured.

From the descriptive data, one can conclude that programs that made a change in head coach between 2015-2018, recruited at a higher level for the class of 2018. The average program had at least 1.11 players transfer from their program between 2015-2018. For offensive efficiency, the average program in 2018 had the offensive rating of roughly 96. For the 2018 season, the Northwestern Wildcats finished 96th in the KenPom offensive efficiency rating and they finished the season with a record 15-17, right around a .500-win percentage.

Coaching changes happen for many programs each season. For the given data set, 32, or 28.82% of the programs experienced at least one coaching change between 2015-2018. The programs that experienced a coaching change had a mean recruiting class of 62.69 for the class of 2018. Programs that did not experience a coaching change had a mean recruiting class of 65.95.

Conference Affiliation:

When it came to P5 schools, the average of all the recruiting classes was a little over 43rd place. For Group of 5 schools, including the AAC and Big East, the average class was rated a little below 93rd place. A breakdown of each conference's average class ranking is depicted in Table 2. The recruiting rankings give some insight into team success. It is evident that

conferences that recruit at a higher-level and obtain a class with a higher ranking, get more bids to the NCAA Tournament. The only outlier is the Big East, who recruits at a lower level than some of the P5 schools but ended up receiving more bids in the NCAA Tournament over the past two seasons (2015-2016 and 2016-2017).

Raw score class ratings ranged from .9963 (Duke, number 1 overall recruiting class) to La Salle with a raw score of .7906 and the worst recruiting class for the programs featured in the study at 167.

Table 2

Descriptive Statistics for Conference Recruiting Rankings

Conference	Average Class Rating	Average Number of NCAA Tournament Bids Over the Past Two Seasons
Big 10 (n: 14)	39.57	5.5
Pac-12 (n: 12)	43.67	3.5
SEC (n: 13)	43.85	6.5
Big 12 (n: 10)	44.60	6.5
ACC (n: 13)	44.69	9
Big East (n: 10)	56.80	6.5
MWC (n: 8)	88.75	2
AAC (n: 11)	92.27	2.5
WCC (n: 3)	103.33	1.5
A-10 (n: 12)	109.17	3
MVC (n: 5)	125.60	1

Regression Analysis:

The goal of the regression is to see when the independent variables significantly predict dependent variable variance. When starting the study, ten variables were used. Once the first run of the test was complete, non-significant variables were removed to improve the R2, or the amount of variance explained within the model. Coaching Change, Apparel Provider, Capital Projects, Graduation Rate (GSR score), and the Average Transfer variable were all removed after the first run. The R Square value is .474, meaning 47.40% of the variance of the dependent

variable can be explained by the independent variables in the model. Again, the five variables with the highest p-scores were removed. Obtaining this finding shows that the five variables did not have a large impact on recruiting rankings for the class of 2018.

Table 3

Ten Variable Regression Analysis

Variables	Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
(Constant)	.941	.214		4.402	.000
Cap. Project	.002	.008	.019	.215	.830
Grad Rate	.000	.000	-.061	-.665	.508
P5G5	.019	.009	.226	2.235	.028
Apparel	.001	.008	.009	.099	.922
USNWR	.000	.000	-.203	-2.155	.034
All Time Win	.182	.061	.286	2.977	.004
Season Win	.032	.025	.132	1.242	.218
Avg. Transfer	-.005	.006	-.082	-.757	.452
Coach Change	.001	.008	.011	.117	.907
Off Efficiency	-9.210E-5	.000	-.186	-1.655	.102

Tables 3 and 4 contain the results of the regression analysis after the non-significant variables were removed. The R Square value of the test moved closer to .500 after the removal of the non-significant variables. The five remaining variables are listed below.

Table 4

Five Variable Regression Analysis

Variables	Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
(Constant)	.794	.037		21.373	.000
P5G5	.016	.008	.188	2.094	.039
USNWR	.000	.000	-.234	-2.813	.006
All Time Win	.198	.057	.310	3.476	.001
Season Win	.035	.022	.141	1.601	.113
Off Efficiency	.000	.000	-.222	-2.256	.027

An unstandardized coefficient represents the amount of change in dependent variable Y due to a change in one unit of independent variable X (Unstandardized, 2018). Each of the statistically significant factors had a positive beta coefficient. This means that for every 1-unit increase in the variable (0 to 1 for P5 vs. G5), the recruiting ranking raw score will increase by the beta coefficient value (in terms of raw recruiting score). For example, for every 1% increase in 2016-2017-win percentage, leads to an improvement of .035 in raw recruiting score. The standard error is an estimate of the standard deviation of the coefficient, the amount it varies across cases (Interpreting, 2007). A standardized beta coefficient compares the strength of the effect of each independent variable to the dependent variable (Standardized, 2019). The higher the value of the beta coefficient, the stronger the effect. For USNWR and Offensive Efficiency the beta is negative since a lower ranking is better. T-score represents the number of standard

deviations away from the mean (T Score, 2019). Lastly, for significance, a score under .05 is considered statistically significant.

Chapter V
DISCUSSION

This study observed the 2018 men's basketball recruiting class and aimed to determine which characteristics surrounding a specific program influenced the variability of the program's recruiting class ranking. Each independent variable was selected after reading previous research that examined why a recruit picked a certain program. The literature review showed many factors impact a recruit's college choice decision. Further, many programs are investing heavily to ensure they do not fall behind in the world of recruiting.

Summary of Findings

Two regression tests were run in order to obtain the data. The first regression included ten variables. Capital Projects, Graduation Rate, Apparel, Coaching Change, and the Average Number of Transfers were all found to be non-significant. For Capital Projects, most programs had a separate team practice facility either inside the arena or outside of the arena. The data collected after running the regression showed no relationship was found between having a practice facility and recruiting ranking. The capital project finding related back to the Schneider and Messenger (2012) study where college hockey players did not rank the program's facilities highly.

Graduation rate (GSR score) was found to not be significant and was also dropped for the second regression. The GSR score finding is like Dumond's (2008) study, which also found

graduation rate as a non-significant factor. The apparel factor was the next to be found non-significant. The average number of transfers leaving the program the average number of transfers leaving the program between 2015-2018 was removed because it was found to be non-significant. While coaching relationship was mentioned heavily throughout the literature review, multiple players leaving a given program did not disrupt the program's recruiting efforts a great deal or seem to impact the image of the team and its coach. Lastly, the coaching change variable was found to be non-significant and it was removed from the data.

Findings Detailed

To summarize, five different variables were used in the second test. Out of the five remaining variables, 2016-2017 Win Percentage was the only variable with a p-value over .05, meaning that it was not significant factor for predicting recruiting ranking for the class of 2018. In the end, the study found conference affiliation, USNWR ranking, all-time win percentage, and 2018 offensive efficiency to be significant. Reflecting on research question 1, and using Table 1 as a resource, one can see that the current college basketball landscape is more favorable to a Power 5 team versus a G5 team based off average recruiting ranking. Further, most of the programs featured in the study had a basketball practice facility. Roughly 30% of the programs featured had a coaching change between 2015-2018. Academically, the average program was ranked in the 50^{th} percentile of the USNWR rankings. For apparel, Nike was the most predominant apparel provider. GSR scores were relatively high for the average program featured in the study. Lastly, the average program featured in the study won more than they lost both historically and during the 2016-2017 basketball season.

To answer research question 2, one can look at the p-scores featured in Table 4. Again, conference affiliation, USNWR ranking, all-time win percentage, and offensive efficiency were

all significant. A team's 2016-2017-win percentage was found to be non-significant for the study. Conference affiliation was a significant factor which is in line with previous findings. There could be many explanations for this finding. Perhaps recruiters at P5 schools are more persuasive, or they have larger recruiting budgets that allow them greater access to a recruit. One could also argue that P5 schools with their larger budgets, have more expensive facilities which is a lure. P5 schools also have a better opportunity to make it to the NCAA Tournament versus mid-major programs and this could be attractive to a recruit. Many P5 programs attain large crowds for their home contests and this could another potential reason a recruit commits to their programs.

Facilities were moderately important to a recruit in the studies presented in the literature review, however, they were not significant in the present study. This could be because so many basketball programs have facilities, at this point a recruit may be expecting a program to have one. Further, if a program has a facility, how does it separate that facility from another program's facility that has the same exact features?

As mentioned earlier in the study, much of the previous research featured survey data. Survey data can contain bias. Those in the college athletics industry are led to believe that these facilities lead to better recruiting outcomes and they almost feel like a necessity. The hockey studies featured in the literature review showed players ranking facilities relatively high. However, the data shows that for the class of 2018, having a basketball practice facility did not predict a statistically significant amount of variance in recruiting rankings. The current study's results could show that the subjects that participated in the Sanger (2008) and Schneider and Messenger (2012) hockey studies were answering the questions in a way to appeal to their athletic administrators. It would be hard for a student-athlete to say they do not appreciate the

multi-million-dollar facility their program has in place, even if it is not that important to them. It could be that administrators have convinced themselves that these facilities are important to student-athletes when it might not be true.

Academics and graduation rate were also mentioned throughout the literature review. Many of the studies stated that a university with a high academic ranking had a recruiting advantage, (Davis, 2006; Doyle & Gaeth, 1990; Dumond et al., 2008; Fisher, 2009; Frank, 2004; Frey, 1982; Johnson et al., 2009; Kankey, 2007; Mirabile & Witte, 2017; Pauline, 2010; Pitts & Evans, 2016; Popp et al., 2011), this was also the case for the men's basketball recruiting class of 2018. Both football players and Olympic sport recruits were interested in institutions with high academic standards. Even though basketball players have the security of having a full-scholarship and a greater opportunity to play professionally after graduation, the data shows that an institution's academic ranking was still important to a basketball recruit. Only 60 players are selected in each NBA draft and professional opportunities vary in salary. The data shows that basketball players are more prone to go to a school with a higher academic ranking versus one with a lower ranking, meaning that, they may be thinking about their future outside of basketball when they commit to a program. The top of top 20 recruiting classes for the class of 2018 contained many programs with high academics such as UCLA, Stanford, Duke, Vanderbilt and USC. This could be one explanation for the significant finding.

Prior research suggests (Dumond et al, 2008; Mirabile & Witte, 2017) that having a high graduation rate has a mixed impact on recruits. For the present study, GSR was found to be non-significant. The average program has a relatively high GSR score. One potential explanation is that players value their education and want to program toward graduation. While this could be

the case, the data did not show that the programs with the highest GSR scores have the highest recruiting ranking.

Recruits had mixed feelings about the importance of a program's apparel provider in the literature review. The current study showed that apparel was not a significant factor for recruits, adding more substance to the previous articles (Davies & Burakowski, 2015). The vast majority of the programs featured in the study were Nike schools. If a recruit wanted to play for a Nike school, they would have multiple options, which could ware down the recruiting impact Nike has for a given program.

Winning recently was not nearly as influential as having a tradition of winning (all-time win percentage) for a recruit in 2018. There have been multiple teams in the past, like George Mason in 2006, that go on an unexpected run in the tournament, but never reach the same level of play in later seasons. They could have lost many players to the draft or to graduation, or they could have lost their coach to another team. All-in-all, to go from Cinderella to Blue Blood, you need to consistently win and then recruits will take notice.

A recruit's relationship with a program's head coach was featured heavily in the literature review. While, it was difficult to find a way to quantify a recruit's relationship with a coach, three different variables were used to try to understand the relationship. These variables include; the offensive efficiency variable (style of play), the coaching change variable, and the average number of transfers from the program variable. Offensive efficiency was the only variable to be found as significant. Meaning that, the class of 2018 wanted to play for a team that had an efficient offense, one that scored a lot of points. This could be an item to note for administrators. Players like to play for high scoring, efficient offensives. Administrators may want to keep this in mind when they are hiring a new coach or making the decision to fire a coach. Nevertheless,

data is limited and firing a coach can impact an athletic department in a multitude of ways (public backlash, players transferring, etc.).

Today, the number of men's basketball transfers is higher than it has been in the past. If a player does not like the offense or does not have an enjoyable role on the team, they can transfer. If a coach leaves or if multiple teammates leave, a player can transfer. Transferring occurs frequently and it has become a common occurrence in men's college basketball. Knowing that one could transfer, may water down a factor like the present coach relationship because this can all change multiple times throughout a player's career.

From the regression, one can see that having a coaching change between 2015-2018 was not significant for the class of 2018. Many programs that make a coaching change do so because the team is not meeting expectations, so they fire the coach and their staff. Those types of teams most likely are already recruiting at a lower-level and have an offense that is not efficient. When a program is recruiting at a low level, their odds of on-court success tend to drop. Lastly, a good portion of the programs that made a coaching change in the dataset were mid-level programs, where it may be hard to attract a recruit no matter the coach.

Finally, like the findings in the literature review, being in a Power 5 conference influenced recruiting rankings. Based off both the descriptive statistics and the regression, one could see a clear advantage to being in the Power 5 when it comes to recruiting.

The aim of the study was to guide administrators and help them to make educated decisions when it comes to spending their scarce resources on recruiting. The findings show that many elements are out of their control. An athletic administrator cannot change their all-time win percentage, whether they are in a Power 5 conference, or their institution's academic ranking at will. These items come to be after decades of work.

For the class of 2018, facilities and apparel providers, and a whole host of other factors were shown to be non-significant. However, this most likely will not stop administrators from wanting to build the grandest facilities and have the latest Nike gear. A lot of the time, perception is reality. Alabama football and Kentucky basketball are expected to have the nicest things whether they lead to better recruiting or not. College athletics is also very much a game of follow the leader. When one program builds the next big thing, others will follow. This idea is what led the industry into an arms race and into massive coaching contracts. If one does not take the plunge, others will start to perceive that the given athletic department is falling behind, and that their administrators are not doing their job. Perception is important. That is why quotes like the one from Big 12 commissioner Bowlsby exist. "The only thing worse than being in the arms race is not being in the arms race, because you fall behind, and you don't have the tools that you need to get the job done" (Redd, 2018, p.8).

Even though the current study did not provide a strong case that one should build practice facilities, have the best apparel, or have a high graduation rate, administrators will still pursue excellence in these areas because these items are perceived as important. However, when it comes to class of 2018, these items did not predict a statistically significant amount of the variance in recruiting rankings.

Future Research

As discussed in the limitations section, this study only examined one basketball recruiting class. Every person is unique, and every recruiting class is unique. This recruiting class had multiple top-10 players commit to Duke. Data for the class of 2017, where the talent was more spread out, could lead to different results. Further research could be conducted by gathering program data and recruiting class data over multiple years to add a deeper understanding of what

a recruit values and to help administrators spot trends. Another research opportunity could be to examine every Division I basketball program. This could give the industry more insight into how to compete as a mid-major program or a lower-level program when more data is involved. It would also be interesting to see this study conducted for college football teams. While there have been regressions based around college football recruiting in the past, running this test for the class of 2018 would update the literature.

One significant limitation of the study was that way in which it quantified the coaching relationship. Since the coaching relationship was found to be an important factor in the literature review, it was imperative to find a way to include it in the regression analysis. There is no true way to quantify a relationship. The current study looked at the number of players who transferred from the program (2015-2018), whether a coach was fired (2015-2018), and the program's offensive efficiency in 2018. Another study could interpret coaching relationship in another manner. For instance, a future study could combine a regression analysis and a survey. The survey could ask student-athletes to rank all the factors used in the regression. The three coaching variables would be combined into one variable and would be included. From there, the survey data would be used just for the coaching variable and the rest would be replaced with secondary data. This may be one way to help quantify the relationship.

Lastly, the current study operationalized capital spending by indicating whether a program had a practice facility. A future study could take this one step further and look at facility cost, year it was constructed, square feet, etc. Or, a future study could remove the practice facility component and look each program's men's basketball recruiting budget, or their overall athletic budget to see if either has a relationship with recruiting ranking.

Conclusions

Recruiting is an art form; it takes a great deal of investment, the right people in place, and a tradition of excellence to get high-level results. Recruiting costs are on the rise and they will continue their upward trajectory in the future. It has been popular thought that building practice facilities and having the nicest clothes and shoes leads to high-level recruiting, but this was suggested to be false by the current study. This study was designed to look at the major players in college basketball and to try and understand which aspects of each program led to their recruiting successes and failures. In the end, being a basketball recruiting power may in fact be out of everyone's control. Conference affiliation, all-time win percentage, USNWR ranking, and offensive efficiency were the factors that had the largest influence on the class of 2018. All-time win percentage is based off a history of having a strong program. One cannot change the past. Conference affiliation is based off decisions made by university presidents. USNWR ranking are determined by the US News and World Report and a whole host of factors go into their ratings that are outside of an athletic administrator's hands. The only significant variable that is somewhat within the grasp of an administrator is the offensive efficiency variable. While, the administrator would not control a team's offense, they can hire and oversee the person that does. Apparel, facilities, graduation rate, the university's academic prestige, coaching change, and the number of transfers that left the program had little influence on the 2018 recruiting class. Even though these factors are statistically insignificant, many administrators are forced to "keep up with the Joneses" to fight off the feeling that they are falling behind. This goes to show that much of administrator's jobs are based around trying to create a solid foundation for their program and hoping to maintain sustained success.

REFERENCES

Austin, P. C., & Steyerberg, E. W. (2015). The number of subjects per variable required in linear regression analyses. Journal of clinical epidemiology, 68(6), 627-636.

Barden, J. Q., Bluhm, D. J., Mitchell, T. R., & Lee, T. W. (2013). Hometown proximity, coaching change, and the success of college basketball recruits. *Journal of Sport Management, 27*(3), 230-246.

Barnett, Z. (2017, February 01). Recruiting shakeup: 247Sports has purchased Scout. Retrieved June 6, 2018, from http://footballscoop.com/news/recruiting-shakeup-247sports-purchased-scout/

Bergman, S. A., & Logan, T. D. (2016). The effect of recruit quality on college football team performance. *Journal of Sport Economics*, *17*(6), 578-600.

Berkowitz, S., & Schnaars, C. (2017). USA TODAY Sports. Retrieved February 24, 2019, from http://sports.usatoday.com/ncaa/finances/

Bigsby, K. G., Ohlmann, J. W., & Zhao, K. (2017). Online and off the field: predicting school choice in college football recruiting from social media data. Decision analysis, *14*(4), 261–273. https://doi.org/10.1287/deca.2017.0353

Boozell, J. (2018, March 27). How every conference is doing in the NCAA tournament. Retrieved March 27, 2019, from https://www.ncaa.com/news/basketball-men/article/2018-03-27/march-madness-how-every-conference-doing-2018-ncaa-tournament

Bossi, E. (2016, June 23). Crunching the numbers: recruiting rankings and the NBA Draft. Retrieved June 6, 2018, from https://basketballrecruiting.rivals.com/news/crunching-the-numbers-recruiting-rankings-and-the-nba-draft

Burnsed, B. (2014, August 20). Growth in Division I athletics expenses outpaces revenue increases. Retrieved June 6, 2018, from http://www.ncaa.org/about/resources/media-center/news/growth-division-i-athletics-expenses-outpaces-revenue-increases

Can apparel deals sway recruits? (2011, September 21). Retrieved February 24, 2019, from https://www.foxsports.com/collegefootball/story/maryland-terrapins-oregon-ducks-can-apparel-deals-sway-college-football-recruits-092111?GT1=39002

Carrie A. Doyle & Gary J. Gaeth (1990) Assessing the institutional choice process of student–athletes, Research Quarterly for Exercise and Sport, 61:1, 85-92

Cooper, K. (1996, February 1). What the basketball prospect wants to know about you! *Coach and Athletic Director*, 24-26.

Davies, M. J., & Burakowski, K. A. (2015). A qualitative analysis of athletic apparel and equipment sponsorship related to student athlete recruitment. *The Qualitative Report*, *20*(3), 271-285. Retrieved from https://nsuworks.nova.edu/tqr/vol20/iss3/7

Davis, J. R. (2006). Freshmen student-athletes: An examination of the decision-making process and satisfaction (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3207962)

Division I academic progress rate (APR). (2018, May 23). Retrieved February 24, 2019, from http://www.ncaa.org/about/resources/research/division-i-academic-progress-rate-apr

Dosh, K. (2017, December 30). College Football Playoff payouts by conference for 2017-18. Retrieved June 6, 2018, from https://www.forbes.com/sites/kristidosh/2017/12/30/college-football-playoff-payouts-by-conference-for-2017-2018/

DSS - interpreting regression output. (2007). Retrieved April 26, 2019, from https://dss.princeton.edu/online_help/analysis/interpreting_regression.htm

Dumond, J. M., Lynch, A.K., & Platania, J. (2008). An economic model of the college football recruiting process. *Journal of Sport Economics*, *9*(1), 67-87.

Everything you need to know about official visits. (n.d.). Retrieved June 6, 2018, from https://www.ncsasports.org/ncaa-eligibility-center/recruiting-rules/official-visits

Fisher, B. (2009). Athletics success and institutional ranking. *New Directions for Higher Education*, *2009*(148), 45-53.

Fisher, E. (2015). CBS Sports Digital signs deal to buy college recruiting website 247Sports.com. Retrieved March 28, 2018, from https://www.sportsbusinessdaily.come/Daily/Issues/2015/12/16/Media/247-Sports.aspx

Frank, R. H. Challenging the myth: a review of the links among college athletics success, student quality, and donations. Miami: Knight Commission on Intercollegiate Athletics, 2004.

Frey, J. H., The governance of intercollegiate athletics. West Point, N.Y.: Leisure Press, 1982.

Frost, J. (2019, March 15). How to interpret r-squared in regression analysis. Retrieved April 2, 2019, from https://statisticsbyjim.com/regression/interpret-r-squared-regression/

Furnham, A. (1986). Response bias, social desirability and dissimulation. *Personality and Individual Differences*, *7*(3), 385-400.

Gabert, T., Hale, J. and Montvalo, G., Differences in college choice factors, college admission, 1999, 16, 20-29

Gallo, A. (2015). A refresher on regression analysis. Retrieved March 29, 2019, from https://hbr.org/2015/11/a-refresher-on-regression-analysis

Goss, B. D., Jubenville, C. B. and Orejan, J. 2006. An examination of influences and factors on the institutional selection processes of freshmen student athletes at small colleges and universities. *Journal of Marketing for Higher Education*, *16*(2): 105–134.

Graduation rates. (2018, November 15). Retrieved April 8, 2019, from http://www.ncaa.org/about/resources/research/graduation-rates

Harrell Jr, F. E. (2015). Regression modeling strategies: with applications to linear models, logistic and ordinal regression, and survival analysis. Springer.

Hobson, W., & Rich, S. (2015, December 21). The latest extravagances in the college sports arms race? Laser tag and mini golf. Retrieved June 6, 2018, from https://www.washingtonpost.com/sports/colleges/for-college-athletic-departments-building-the-best-is-never-ending-task/2015/12/21/e8384dd4-a558-11e5-9c4e-be37f66848bb_story.html?noredirect=on&utm_term=.84b6e97a3a1e

Johnson, G. R., Jubenville, C., & Goss, B. (2009). Using institutional selection factors to develop recruiting profiles: marking small, private colleges and universities to prospective student athletes. *Journal for Marketing in Higher Education*, *19*(1).

Judson, K. M., Gorchels, L., & Aurand, T. W. (2006). Building a university brand from within: a comparison of coaches' perspectives of internal branding. *Journal for Marketing for Higher Education*, *16*(1), 97–114.

Kankey, K., & Quarterman, J. (2007). Factors influencing the university choice of NCAA division 1 softball players. *The Smart Journal*, *3*(2), 35-50.

Kesselring, C. (2018, March 26). How much money each NCAA Tournament team earned for their conference (2017). Retrieved June 6, 2018, from https://herosports.com/ncaa-tournament/how-much-money-ncaa-tournament-earned-conference-2017-basketball-fund-a7a7

Koos, T. (2015, January 09). In college football, assistant coach salaries on the rise. Retrieved June 6, 2018, from https://www.deseretnews.com/article/865619020/In-college-football-assistant-coach-salaries-on-the-rise.html

Labar, S. (2017, January 19). Social media is changing college football recruiting. Retrieved February 24, 2019, from https://herosports.com/news/college-football-recruiting-social-media-changing

Langelett, G. (2003). The relationship between recruiting and team performance in Division IA college football. *Journal of Sports Economics*, *4*(3), 240-245.

Magnusen, M. J., Kim, Y., Perrewe, P. L., & Ferris, G. R. (2014). A critical review and synthesis of student athlete college choice factors: recruiting effectiveness in NCAA sports. *International Journal of Coaching and Sport Science*, *9*(6), 1265-1286.

Maxcy, J. G. (2013). Efficiency and managerial performance in FBS college football. *Journal of Sports Economics, 14*(4), 368-388.

Mirabile, M. P., & Witte, M. D. (2016). A discrete-choice model of a college football recruit's program selection decision. *Journal of Sports Economics, 18*(3), 211-238.

Morris, Ron. "Zion Williamson a victory for Duke, but do top recruits translate to titles?" *The News & Observer*, News & Observer, 22 Jan. 2018, www.newsobserver.com/sports/college/acc/duke/article195926054.html.

Morse, R., Brooks, E., & Mason, M. (2018, September 09). How U.S. News calculated the 2019 best colleges rankings. Retrieved February 24, 2019, from https://www.usnews.com/education/best-colleges/articles/how-us-news-calculated-the-rankings

Najmabadi, S., & Levitt, D. (2018, May 01). The cost of recruiting athletes has doubled at top Texas colleges. At some schools, students help foot the bill. Retrieved June 6, 2018, from https://www.texastribune.org/2018/05/01/Texas-college-recruiting-costs-doubled-student-fees/

Pauline, J. (2010). Factors influencing college selection by NCAA division 1, division 2, and division 3 lacrosse players. *Journal of Research, 5*(2), 62-69.

Pitts, J., & Evans, B. (2016). The role of conference externalities and other factors in determining the annual recruiting rankings of football subdivision (FBS) teams. *Journal of Applied Economics*, 46(33), 3164-3174.

Popp, N., Pierce, D., & Hums, M. (2011). A comparison of the college selection process for international and domestic student-athletes at NCAA D1 institutions. *Sport Management Review, 14*, 176-187.

Redd, D. (2018, July 21). College athletic facility arms race won't slow down any time soon. Retrieved February 24, 2019, from https://www.wvgazettemail.com/sports/columnists/derek_redd/derek-redd-college-athletic-facility-arms-race-won-t-slow/article_ef1ddcd6-86c0-5493-b143-f5d08fc035be.html

Rooney, J. F., Jr. (1987). *The Recruiting Game: toward a new system of intercollegiate sport*. Lincoln: University of Nebraska Press.

Sander, L. (2008, December 19). For college athletes, recruiting is a fair (but flawed game). *The Chronicle of Higher Education*. Retrieved from http://chronicle.com

Sanger, D.L. (2016). *What effect do athletic facilities have on recruitment of Division 1 student-athletes?* (Unpublished master's thesis). Bowling Green State University.

Sato, K. (2015, January 27). New data reveals Nike's dominance among football recruits. Retrieved February 24, 2019, from https://www.huffingtonpost.com/kai-sato/new-data-reveals-nikes-do_b_6551198.html

Schneder, R., & Messenger, S. (2012). The impact of athletic facilities on the recruitment of potential student-athletes. *College Student Journal*, *46*(4), 805-811. Retrieved from https://auth-lib-unc-edu.libproxy.lib.unc.edu/ezproxypass:[]auth.php.?url=http://search.ebscohost.com.libproxy.lib.unc.edu/login.aspx?direct=true&db=aph&AN=84271977&site=ehost-live&scope=site

Sevier, R. A. 2000. Building an effective recruiting funnel. *The Journal of College Admission, 169*: 10–19.

Smith, M. (2011, August 22). Athletic budgets continue to climb. Retrieved June 6, 2018, from https://www.sportsbusinessdaily.com/Journal/Issues/2011/08/22/In-Depth/Budgets.aspx

Solomon, J. (2014, August 07). NCAA adopts new Division I model giving Power 5 autonomy. Retrieved June 6, 2018, from https://www.cbssports.com/college-football/news/ncaa-adopts-new-division-i-model-giving-power-5-autonomy/

Standardized beta coefficient: definition & example. (2017, October 15). Retrieved April 26, 2019, from https://www.statisticshowto.datasciencecentral.com/standardized-beta-coefficient/

Staples, A. (2018, August 14). Ed Oliver is college football's ultimate boss. Retrieved February 24, 2019, from https://www.si.com/college-football/2018/08/14/ed-oliver-houston-cougars-heisman-nfl-draft

T score formula: calculate in easy steps. (2019). Retrieved April 26, 2019, from https://www.statisticshowto.datasciencecentral.com/probability-and-statistics/t-distribution/t-score-formula/

The best colleges in America, ranked. (n.d.). Retrieved April 05, 2018, from https://www.usnews.com/best-colleges

Tracking transfer in Division I men's basketball. (2018, December 18). Retrieved February 24, 2019, from http://www.ncaa.org/about/resources/research/tracking-transfer-division-i-men-s-basketball

Treadway, D.C., Adams, G., Hayes, T.J., Perrewe, P.L., Magnusen, M.J., & Ferris, G.R. (2014). The roles of recruiter political skill and performance resource leveraging in NCAA football recruitment effectiveness. *Journal of Management*, *40*(6), 1607-1626.

Unstandardized coefficient. (2018, September 12). Retrieved April 2, 2019, from https://www.statisticshowto.datasciencecentral.com/unstandardized-coefficient/

Vaughn, A. R. (2017, April 03). How every conference fared in the NCAA tournament. Retrieved March 27, 2019, from https://www.ncaa.com/news/basketball-men/article/2017-04-03/march-madness-how-every-conference-fared-ncaa-tournament

Widdison, J. M. (1982). Factors influencing recruiting female intercollegiate volleyball players in their selection of a university. Unpublished Master's Thesis, University of Utah, Salt Lake City, UT.

2018 top basketball recruits. (2018). Retrieved April 04, 2018, from https://247sports.com/Season/2018-Basketball/CompositeRecruitRankings?InstitutionGroup=HighSchool

2018 basketball recruits search. (n.d.). Retrieved June 6, 2018, from https://247sports.com/Season/2018-Basketball/Recruits

247Sports rating explanation. (2012, July 20). Retrieved April 04, 2018, from https://247sports.com/college/appalachian-state/Article/247Sports-Rating-Explanation-81574